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FINANCIAL AND ECONOMIC FACTORS

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Ontario



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Issue Paper #6

Financial and Economic Factors

Introduction

- I. Economic Efficiency and the Decision Making Process
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FINANCIAL AND ECONOMIC FACTORS

Introduction

The terms of reference of the Royal Commission on Electric Power Planning include an examination of the long-range electric power planning concepts of Ontario Hydro for the period 1983-93 and beyond, in order to assist in developing a framework for "planning and implementing the electric power system in the best interests of the people of Ontario". At the most fundamental level, therefore, a major responsibility of the Commission is to explore the potential roles of Ontario Hydro as a public corporation, combining the responsibilities of a delivery agency of government with the objectives of an energy Corporation in competition for resources with other public and private enterprises.

The present mandate of Ontario Hydro has been defined as being "to supply the demands of the people of Ontario for electrical energy at the lowest feasible cost consistent with safety for its employees and the public, and a high quality of service to its customers and subject to the social and economic concerns of the people of Ontario". Numerous consequences flow from the interpretation applied to these words. Ontario Hydro as a large corporation inevitably has a major impact on the provincial economy and hence on the lives of the province's people. From a broader perspective, the capital expenditures associated with its system expansion programme must be seen as part of the total long-term energy supply scenario, i.e., in the light of other possible

commitments to large-scale supply sources, and to investment in energy-conserving technologies.

Parallel to the changes in the Corporation's mandate have evolved the internal financial objectives of Ontario Hydro which include;

- i) to finance needed facilities at the lowest feasible cost consistent with sound financial operation;
- ii) to allocate the cost of capital facilities equitably among present and future customers; and
- iii) to be financially independent from government.

Though these considerations might seem to reside in a highly technical sphere, decisions as to how best to meet them are inter-related with those on system planning, power pricing and other aspects of Ontario Hydro's planning of concern to all power consumers.

This paper will highlight some of the major issues arising from financial and economic factors.

1. Economic Efficiency and the Decision-Making Process

Ontario Hydro has indicated in its submission on Socio-Economic Factors that in the financial and economic areas its long-range planning is based upon three considerations:

1. internal economic efficiency;
2. impact on the external economy, and
3. ability to finance system expansion.

Ranking of alternatives is therefore partly dependent on internal economic efficiency (that is, making the best use of all resources available to the organization). This process is superseded, however, by the application of external constraints specified by government (for example, capital borrowing limitations, environmental regulations, and safety standards). Trade-offs are also made against objectives other than maximizing internal economic efficiency -- for example, against the goal of minimum impact on the economy, -- which may produce a different ranking of alternatives. Where government priorities have not been specified, this judgemental trade-off process occurs at the Corporate Office level of Ontario Hydro.

One area of concern to the Commission is the means by which criteria other than economic efficiency can be incorporated into decision-making, and by whom the costs of accommodating these criteria are borne. Task Force Hydro, which undertook an earlier review of Hydro's role and place, examined similar questions, concluding, for example, that the goal of ensuring the most efficient use of capital resources should be limited in order to support provincial energy (fuels) and environmental policies. It

further recommended that additional costs of related environmental factors should as a general rule be included in electricity prices.

Factors influencing decisions can be treated in a variety of ways: as specific constraints established by government and applied prior to corporate ranking of alternatives, as costs internalized in the quantitative corporate analysis, or as qualitative concerns subject to corporate judgement. Potential constraining factors in decision making include the power demand to be supplied, reliability and quality of service, safety standards, environmental factors, and socio-economic factors.

The requirement that Ontario Hydro "meet demand for electricity" is itself an interesting topic for discussion -- implying both that Ontario Hydro will be considered the major supply agency for electricity and that electricity supply alone is the Corporation's goal. However, these interpretations may mean that total economic efficiency and/or social well-being is not maximized.

As the total energy supply situation in Ontario becomes more critical, two issues worth discussing are the degree to which alternative suppliers of electricity ought to be encouraged and the extent to which Ontario Hydro should discourage electricity usage and/or promote uses of other forms of energy.

Process heat from a number of industries could be used for electric power generation. There are some industries which now produce electricity for their own needs, and sell surplus electrical energy to Ontario Hydro. Specific questions include:

- what conditions would encourage other industrial customers of Ontario Hydro to invest in generating equipment? (What is the "opportunity cost" to the company of this use of funds compared to investment in production facilities? What assumptions about future power rates charged by Ontario Hydro and future prices paid by Ontario Hydro for purchased power are significant?)
- what supportive policies would encourage such co-generation schemes?
- from a system-wide point of view, what are the economic advantages and disadvantages of smaller-scale generating stations? (Note that this issue is introduced also in Issue Paper #3 and #7.)

Ontario Hydro, faced with the need to reduce electrical energy requirements, has a major electricity conservation programme in progress. Specific actions taken by utilities in other jurisdictions, not yet adopted by Ontario Hydro, have included the provision of loans for the installation of insulation or allowing payment for insulation over time from utility bills. Questions to be discussed in this area might include:

- on a province-wide scale, what are the costs and benefits of investment in electrical energy-saving equipment as opposed to electrical energy supply?
- what further specific programmes to promote energy conservation would be feasible at the utility level? How can they be funded?

II. Relationship between Ontario Hydro and the Ontario Government in Financial Matters

The relationship of Ontario Hydro and government with respect to financial matters has been explored and clarified in several public reviews over the past 10 years. The Ontario Committee on Taxation in 1967 examined some revenue implications of public enterprises, and suggested that Ontario Hydro would benefit from periodic review of its "nature, objectives, policies, and practices" to ensure that the implications of "service at cost" could be clearly understood. Task Force Hydro subsequently examined the role of Ontario Hydro within the Province, with one of its reports dealing specifically with financial policies and rates. Further related reviews were undertaken by the Ontario Energy Board (the 1974 hearings on Financial Plans and Policies, hearings in 1974, 1975 and 1976 on bulk power rates) with a forthcoming hearing which will concentrate on electricity costing and pricing principles.

At present Ontario Hydro is a crown corporation independent of day-to-day management by government and financially self-supporting (in the sense of being separate from direct subsidy from general tax revenues). However, this arms length relationship is qualified by the important role of the province as guarantor of Ontario Hydro bonds, as discussed later.

One consequence of the arms length position is that Ontario Hydro must obtain sufficient customer revenue to meet its own operating requirements. However, subsidies from tax revenue have been provided where Hydro was required to undertake objectives not justifiable solely on a "cost" basis -- for example, the programmes

for electrification of rural areas and remote northern communities.

Some issues arising from these facts are:

- to what extent ought Ontario Hydro to remain in its present financial relationship to the government? What would be the relative costs and benefits of considering the provision of electricity as a public service of the same type as the provision of schools, hospitals, and roads?
- under what conditions are government subsidies to Ontario Hydro justifiable?

Ontario Hydro raises money for its capital construction programme through borrowing and through rates (i.e., "externally" and "internally"). The basic objective is to minimize the long-run cost of funds. Money borrowed (debt capital) and the interest charged on it must be repaid over a period of time. The level of internal ("equity") financing in corporations can be an important consideration in determining its continued ability to raise money, giving an indication of the ability of the organization to sustain the capital employed. A variety of indicators of financial soundness can be used by electric utilities, including debt/equity ratios, interest coverage, and rates of return. The relevance of these to a publicly-owned utility such as Ontario Hydro is a subject of some disagreement, particularly in the light of the provincial guarantee of Ontario Hydro bonds. That is, some have argued that since its bond issues carry the guarantee of the province, the financial integrity of the Corporation itself has no real significance. This view is not, however, shared by Ontario Hydro, its financial advisors from the investment community or the Ontario Energy Board.

a) Borrowing

All bonds sold by Ontario Hydro are guaranteed as to principal and interest by the government. Therefore, the ability to repay is supported not only by the financial soundness of Ontario Hydro but also by the tax base of the province. The guarantee thus provides an indirect subsidy to Ontario Hydro, as it allows more money to be raised in better markets. However, because the province itself may borrow money when its non-market sources of capital (e.g. Canada Pension Plan) are not adequate, the borrowing requirements of the Corporation and the Province must be considered together. The policy implications of this inter-relationship were demonstrated over the last year when the province, in order to protect the joint availability of capital, established an annual ceiling of \$1.5 billion for Hydro borrowing over the years 1976 to 1978, reserving an additional \$0.5 billion for the province's own needs.

It is difficult to reconcile the numerous uncertainties even in the shorter-term, of capital available to the Province and Hydro with the need to establish long-range expenditures with at least some degree of assurance. One subject for debate, therefore, is:

- how can the joint capital needs of the province and Ontario Hydro best be reviewed and co-ordinated? What groups ought to be involved in this process?

b) Rates

Ontario Hydro, unlike private utilities, is not regulated. However, its bulk power rate changes are reviewed by the Ontario

Energy Board. These review processes focus on consideration of operational costs. Although variable costs such as fuel purchases have had a dramatic impact on rates in recent years (with coal quadrupling in price since 1973, for example), the major long-term pressures on rates arise from Ontario Hydro's capital expansion programme. This results in 'fixed' charges (interest, depreciation, and debt retirement). Issues which might be discussed:

- what would be the consequences of regulating Ontario Hydro? What specific policy guidelines could be given to the Corporation in respect of capital structure and financial integrity?
- on what basis should consideration of Ontario Hydro's operating budget be undertaken (how often? by what agency?) How can it be co-ordinated with consideration of the capital construction programme expenditures?

Although Ontario Hydro is not a profit-making enterprise in the usual sense, in most years it earns a "net income" resulting from costs allowed by the Power Corporation Act. Although it has sometimes been suggested that a public utility ought not to retain such surpluses, it has also been argued that there is justification on economic grounds that it do so, because too low a level of "internally-generated" funds compared to competitors in the capital and energy markets would result in misallocation of social and economic resources. This might lead to underpricing of electricity, encouraging both its wasteful use and an unjustified rate of growth of system capacity.

The operating surplus has historically been applied to interest costs, a "debt retirement fund" and to a "reserve for rate stabilization and contingencies". With Ontario Hydro's

recent emphasis on capital-intensive programmes, a system expansion charge has also been proposed (but never implemented) in order to contribute to sharply-increased capital requirements. Other uses of surplus funds have also been suggested (e.g., investment in energy-conservation technology). Therefore, questions for consideration include the following:

- should some portion of future system capacity be paid for by present Ontario Hydro customers?
- to what purposes should revenue surplus be applied?

One aspect of electricity rates is the question of basic pricing policy. Energy prices can be based on many different principles; for example, on a "B.T.U.-equivalence" basis, on the basis of "cost" (which involves defining which costs are legitimate ones), or in many other ways. Pricing decisions are crucial ones, since power rates are linked to both borrowing requirements and to the demand for electricity. An increased amount of money raised through rates will reduce borrowing requirements. Moreover, higher prices (particularly relative to other energy sources) can reduce the demand for electricity and the consequent need to expand the power system, therefore reducing future borrowings and rates. The Ontario Energy Board's costing and pricing hearings will examine some aspects of pricing policy, the relationship of demand and price, the impact of electricity prices, and the allocation of costs among customer classes.

IV. Availability of Capital and Other Resources

In producing electric power, Ontario Hydro competes with others for use of resources, including capital and labour. A story contained in one of the supplementary exhibits of the Toronto Dominion Bank Submission to the Commission illustrates some of the factors which might be considered in examining the future growth rates (and limits thereto) of the Ontario Hydro system. It concerns a discussion between John Maynard Keynes and an eminent British architect who denied the potential for rebuilding post-war British housing with the phrase:

'Where's the money to come from?'

'The money,' Keynes said, 'But surely, Sir John, you don't build houses with money? Do you mean that there won't be enough bricks and mortar and steel and cement?'

'Oh no,' the architect replied, 'of course there will be plenty of all that.'

'Do you mean,' Keynes went on, 'that there won't be enough labour? For what will the builders be doing if they are not building houses?'

'Oh no, that is all right,' the architect agreed.

'Then,' said Keynes, 'there is only one conclusion. You must be meaning, Sir John, that there won't be enough architects.'

But then Keynes felt he was trespassing on the boundaries of politeness. So he hurried to add:

'Well, if there are bricks and mortar and steel and concrete and labour and architects why not assemble all this good material into houses?'

But the architect was quite unconvinced.

'What I want to know,' he repeated, 'is where the money is coming from'

Capital availability has recently become a topic of particular concern, although as the Toronto Dominion Bank submission to the Commission's information hearings pointed out, "Capital always has been and always will be a scarce resource which must be allocated among competing demands." Views on the ability of financial markets to generate sufficient capital to meet requirements for energy supplies, housing, the business and social sector will be useful to the Commission. Among the numerous uncertainties attached to the availability of capital, even in the next few years, are the rate of market growth (dependent partly on the rates of growth in national income and the relative proportion given to domestic savings); monetary and fiscal policies of the Canadian government and other governments; potential demands on financial markets by other borrowers; and investor attitudes towards Ontario Hydro bonds in relation to other issues. Within the range of these uncertainties the following issues emerge:

- what are the potential impacts on other borrowers of large demands by Ontario Hydro? For example, would those demands restrict the capital available for alternate energy technology and/or conservation investments?
- can a mechanism for co-ordinating capital investment timing with other large borrowers be developed?

Most of the physical facilities which Ontario Hydro finances with borrowed money (e.g., generating stations, transmission lines) have a long life-time (30 or more years in the case of generating stations) and costs are recovered by amortization over that life-time. Ontario Hydro tries, therefore, to use long-term bond markets to the fullest extent. However, it has indicated that because of increased requirements and increased competition for long-term funds, 40 per cent of its requirements in the years 1976

to 1982 will come from short (5 years or less) and intermediate (6-15 years) bonds, as compared to 20 per cent from these sources in 1974 and 1975.

Ontario Hydro was able to finance most of its past capital construction programme in the Canadian bond market. The U.S. bond market has also been used increasingly in the last few years. Greater reliance on U.S. and other foreign capital sources will be required in the next five years. In this area, some questions which might be raised are:

- what are the risks and benefits of using different markets and types of issues?
- what trade-offs are involved between the quantity and price of capital available?
- should Ontario Hydro, as a matter of public policy, be restricted to certain markets?

The previously mentioned capital borrowing constraint has meant that Ontario Hydro's system expansion expenditures had to be reduced. Over \$5 billion in reductions were made -- by deferring the in-service dates of generation planned to 1985 rather than by altering the type or order of installation of the facilities. This reduced rate of capacity growth means that the projected demand growth rate cannot be met at Ontario Hydro's preferred levels of reliability. The capital ceiling has therefore resulted in Ontario Hydro, for the first time, setting limits to the growth rate it is planning. Formerly, capital availability had not been a major component of system planning decisions. It is evident that the question of capital as a limiting factor is a crucial one for the Commission to consider.

Some basic issues are:

- is capital to be considered an absolute constraint in planning the future electric power system?
- if debt capital is limited, ought more money to be raised through electricity rates?
- what would be the consequence of capital availability becoming the starting point of planning the electric power system? For example, can a capital-intensive generating programme be justified?
- what are the implications for structures of decision-making in the Hydro organization?

Ontario Hydro also competes for materials and manpower in the marketplace. A number of major Canadian energy projects are underway or proposed (e.g., Baie James, Syncrude, Polar Gas, Mackenzie Valley pipeline, etc.). Questions raised include:

- to what extent will demands for manpower and equipment by Ontario Hydro's expansion programme and other major Canadian energy projects be compatible?
- can Ontario Hydro construction projects be used as a contra-cyclical economic tool? Should they be?

V. Economic Impact

a) Impact of Ontario Hydro as an organization

It was suggested in Issue Paper #2 that the demand for electric power and the rate and nature of economic growth are at least partly linked. On the other side of the coin, the business of supplying electric power and energy is itself a significant influence on the province's economy. Ontario Hydro is a large corporation in terms of employees and operating and capital expenditures. Expenditures have concentrated importance, being focused in certain sectors (e.g., construction, manufacture of electric power system components, etc.). Some expenditures are on highly specialized equipment (e.g., nuclear technology). Therefore it is worth asking:

- what are the consequences of differing rates and types of capacity growth in terms of employment?

The construction and operation of Ontario Hydro generating stations has significant community impact due to the influx of workers, payment of grants in-lieu of taxes, demands for services and demands on the local supply of labour. Wage levels in the community may also be affected. A supplementary allowance of \$1 million was made (in addition to the grant-in-lieu of taxes) for Bruce Nuclear Power Development, paid to the County of Bruce in recognition of the demands placed on community services by the presence of a power station.

A more general problem is that of external "social costs", that is, costs incurred outside of the Ontario Hydro organization and not normally reflected in the cost of power (e.g., the environmental damage resulting from emissions from a

coal-fired generating station). Studies done by Ontario Hydro on the social costs of electric power produced for export have resulted in the addition of a small surcharge on the rate for exported power. Some issues which might be raised:

- what is the nature of social costs resulting from the generation and transmission of electrical energy? To what extent can they be quantified?
- if quantifiable impacts are borne locally, should there be a general principle of charging a 'social cost' to all power consumers of the province and reimbursing groups affected?
- if net costs to a community occur as a result of Ontario Hydro planning decisions, ought these to be paid by the Corporation? by the province?

A more general concern is the potential use of Ontario Hydro's system expansion programme as a deliberate tool of regional development. In addition to the stimulus possible from construction and operation of generation plants, there is the possible use of stations as a magnet for industrial and/or residential development. Some factors: capital efficiency (e.g., optimizing use of infrastructure such as roads), efficiency of use of total resources (e.g., use of steam from generating stations for heating or industrial purposes or use of industrial waste for power generation). The basic issue is:

- ought Ontario Hydro to be used as a deliberate tool of regional development? If so, is a government subsidy involved?
- b) Economic impact of electricity rates

As already noted in Issue Paper #2, the impact of electricity prices on the provincial economy, and on the individual consumer is an important topic.

The nature of Ontario Hydro's cost allocation and pricing policies are to be the subject of an intensive review by the Ontario Energy Board. However, the general principles of power pricing are a matter of interest to many of the participants in the Commission's deliberations. Numerous questions can be raised, including:

- should differential rates be offered to certain customers to further specific goals? If so, what subsidies are implied?

A number of participants in the Commission's hearings were interested in the relationship between electricity pricing and the demand for electricity. Many noted that "underpricing" of electricity results in its wasteful use. The Office of Energy Conservation (Federal Department of Energy, Mines and Resources) stated in its submission "It is essential that in planning for optimal resource management one ensures that energy prices reflect the full social costs of production ... and that consumers face energy prices which signal the full social costs of producing more energy". Marginal cost pricing is one approach which would more accurately reflect the 'real' costs of electricity production.

However, rising prices for electricity are a matter of particular concern to low-income and fixed-income customers of Ontario Hydro. The total implications of rate structures need, therefore, to be examined. Questions include:

- which customers will be adversely affected by rate structures designed to fully reflect foreseeable electricity production costs?

- what supportive policies can be suggested to alleviate the short-term impact on such customers?

c) Impact of availability and quality of service

One of the many trade-offs involved in electricity supply is that between the cost of providing system capacity and the cost of not having enough available supply. Although Ontario Hydro now has a study underway on the importance of reliable power supply to its customers, studies on the costs of inadequate power supply in Ontario are not extensive; therefore, it would be advantageous to have an indication from Ontarians as to the acceptability of differing levels of power availability.

Among questions which could profitably be considered are:

- what would be the impact on potential new customers of foreseeable inadequacies in electricity supply?
- in the event of a need to allocate a limited amount of electric power and energy, which uses should be given priority?
- what technical modifications would be necessary to allow certain loads to be interrupted while providing "essential" requirements? How do the costs of these measures compare to the capacity and fuel cost savings possible?

VI. Self-Reliance

At both the national and provincial levels the question of energy self-sufficiency (or self-reliance) has been a significant policy issue. At the national level, Canada is now a net importer of oil (with consequent detrimental effects on balance of payments). The prospects for long-term availability of indigenous oil and natural gas resources depends on decisions on future major energy projects. One trade-off is between security of supply and the higher capital costs associated with development of frontier resources.

The recent federal government document, An Energy Strategy for Canada, suggests a strategy of "self-reliance" i.e., reducing dependence on foreign oil by energy conservation and interfuel substitution (including the increased use of electricity produced in coal and nuclear stations).

Ontario as a province is particularly vulnerable to outside influences on energy supply, as it depends on extra-provincial sources for some 80 per cent of energy requirements. Electricity is a potential "indigenous" source of energy for the province (although it should be noted that about one-quarter of electrical energy presently produced by Ontario Hydro uses U.S. coal as a primary fuel). Uranium is the major fuel available in significant quantities within the province.

An obvious supplement to in-province generation is the import of electrical energy from other provinces (and/or the United

States). The issues relating to interconnections between Ontario, Quebec, Manitoba, and the states of New York and Michigan will be introduced in Issue Paper #7 - "The Total Electric Power System".

Electrical interconnections provide opportunity for two-way exchange. Exports of "surplus interruptible" power to the United States are now occurring. These exports have provided significant benefit to Ontario power customers, reducing power rates and having beneficial effects on the Canadian balance of payments.

"Firm" exports of power are not now undertaken by Ontario Hydro (although other provinces have committed surplus capacity to U.S. markets). The possibility of such exports has been suggested; for example, "upgrading" uranium with the use of Canadian technology and labour in American-financed CANDU plants and selling the electricity to the United States. This would provide some employment, have a favourable effect on the balance of payments and attract U.S. capital, but the environmental implications (including waste disposal) might be unacceptable.

Joint ventures with other provinces may also be desirable: either participation by Ontario in extra-provincial projects (e.g., hydroelectric plants) or by other provinces within Ontario (e.g., CANDU). Projects not economically feasible for a single utility could thereby be advanced.

VII. Economic Implications of Reduced Electricity Growth Rates

The implications of differing levels of energy growth rates have been explored in a number of studies. One such investigation, the Energy Policy Project of the Ford Foundation, described three scenarios for the United States out of the large number of possibilities of an energy future: "historical growth", "technical fix", and "zero energy growth" scenarios, corresponding to growth rates, per capita, of 3.4 per cent, 1.9 per cent and zero per cent annually. In the "Historical Growth" scenario a vigorous national effort to enlarge energy supply was seen to be necessary, and supply options were inflexible. In the "Technical Fix" scenario major efforts would be directed to applying practical, economical, energy-saving technology available now or soon. Supply options were more flexible, with a halt in at least one of the major domestic sources possible while still requiring less than historical growth rates in other sources of supply. The Zero Growth scenario included the energy-saving devices of Technical Fix, along with a distinct re-direction of economic growth towards less energy-intensive economic activities. A much wider choice of supply was possible. The employment, GNP, and other economic implications of the scenarios were also traced.

At the level of actual policy choice, participants in our hearings have often cited Sweden's energy policy as an example of a national effort directed towards radically lower levels of energy growth. Sweden's energy policy calls for a reduction in the growth rate in total energy to 2 per cent in the 1980's and zero per cent past 1990. It should be noted, however, that electricity growth

rates continue to approximate 6 per cent within this plan for total energy requirements.

During the information hearings, many participants offered views on the likely range of growth rates in demand for electrical energy assuming foreseeable trends in a number of areas as discussed in Issue Paper #2. Others commented on the impacts of reduced rates of growth on electricity supply in the areas mentioned previously in this paper (e.g., employment in Ontario Hydro construction activities, manufacturing of power system components, electricity-intensive industries). A great deal of concern was focused on the linkage between economic growth and growth in energy requirements.

A more comprehensive overview of the consequences of reduced electricity growth rates would be useful. (It might indicate, for example, that impacts felt in one area due to reduced electricity growth rates are accompanied by beneficial effects in other sectors, or that they can be softened by supportive policies.) Reduced growth in system capacity might have financial and economic implications in the areas of:

1. Employment (e.g., jobs lost/not created; jobs created; structural changes in the economy).
2. Economic Growth (e.g., in-province expenditures on energy supply; sectorial shifts; types of economic growth).
3. Non-electricity Requirements (e.g., pattern of capital and operating expenditures associated with supply options).
4. Energy Import/Export Possibilities (e.g., extra-provincial expenditure: balance of payments).

5. Investment in Energy Conservation options.
6. Environmental and Social Costs.

APPENDICES

The attached appendices provide first, comments relating to the financial and economic factors of electric power which were made at the Commission's Preliminary Public Meetings and the Public Information Hearings; secondly, specific references to the subject in the transcripts of the hearings; thirdly, references to the subject included in the Research and Background Papers prepared for the Commission; and fourthly, selected examples of recommendations and opinions of review agencies on the subject. More detailed information on "Financial and Economic Factors" is contained in the transcripts, memoranda, submissions, and research documents which are available in the Commission's Information Centre, 14 Carlton Street, Toronto, Ontario, M5B 1K5 and in the Regional Depositories located in the Main Libraries in Thunder Bay, Sudbury, London and Ottawa.

APPENDIX A

REFERENCES TO FINANCIAL AND ECONOMIC FACTORS

MADE DURING

THE PRELIMINARY PUBLIC MEETINGS

I. Social and Economic Impact

"It is the heart of energy policy to decide whether, or to what degree, (the high capital cost, high energy cost and high environmental and social cost) are worth paying in order to provide energy."

S94

"The government...should lay down the guidelines, establish the constraints of environmental protection and re-establish Ontario Hydro as a servant of the government rather than the controller of the economic and social well being of the Province."

S177

"The ultimate challenge of electric power planning is not only to meet unpredictable needs but to neutralize or at least substantially ameliorate for the general public some of the notable excesses of our industrial society in Ontario."

S125

"Any conservation program will have to consider carefully the redistribution of labour. Many of the suggested programs lead to an increase in employment which is fine, except that it is most often employment in low-wage sectors. People must not be impoverished by well-intentioned but thoughtless actions."

S16

"We don't want to sacrifice the quality of our environment and life-style to support the waste and unorganized growth of the present economic system."

S22

"The majority of people desire the comfort, convenience and leisure that is provided through the consumption of energy - particularly energy in the form of electricity - and are prepared to accept the essentially harmless encroachments on the environment, which are the unavoidable consequence of the generation, transmission, and distribution of electrical energy at reasonable rates."

S28

"The capital intensity of Ontario Hydro and its effect on the financial resources of the province as well as private industry, commerce and citizens, although perhaps not fully understood by us, is recognized and appreciated. Accordingly, studies into methods to reduce the rate of peak demand growth are supported."

p.1849

V15

"Both the availability of electric power and a cost differential should be used to slow down and if necessary limit the population growth of large cities and to decentralize future industrial and business development to the benefit of smaller population centres rather than building new cities and towns."

S125

"The attrition of rural land to industrial development is often abetted by the establishment of hydro power sources."

S71

"What we would like is some assurance that our industry who provide such a great number of jobs is going to be assured, and we can assure them, that they can expand their plants to keep the goods coming and keep up our export markets and provide employment for such a large number of people in this region."

p.1470

V11

"We are not convinced that the total grid system is essential to Ontario's future economy."

S140

II. Pricing

"The price of electricity must reflect the true cost of producing and transmitting clean electricity. Right now I would say the electricity which is produced is not as clean as it can be because of items such as cooling towers, scrubbers, and non-chemical maintenance of right-of-way which Hydro avoids to, perhaps, produce electricity at the lowest rate possible."

p.1580

V13

"Financial incentives to use more power must be swiftly reversed to disincentives."

S97

"By means of heavy taxation of power used above a specified level can industry be induced to develop labour-intensive rather than automated operations?"

S176

"Surely after so many years of operation, Hydro should be able to finance its own expansions without going to the people for greater investment."

S112

"We in the north are being exploited, why should the consumers that are now paying for hydro use be asked to provide finances for new hydro growth?"

S36

"We feel that the price of electric power should be equalized throughout the province so that small communities should not be penalized because their "block purchases" are small."

p.1663

V13

"The cost of domestic heating is of vital concern to the average man. If it goes beyond the point where we can afford to heat our homes, what are we supposed to do? Freeze to death? In the dark?"

p.1952

V15

III. Financing

"Government loans to persons starting to build their own homes has resulted in a tremendous mobilization of private capital to stimulate this sector of the economy. If householders were given similar financial incentives to set up energy-saving and energy-producing installations, the financial support from the private sector would probably be equally successful."

p.1965

V15

"The Provincial Government should be encouraged to provide income or other tax incentives or reprieves for those who invent or improve new electrical equipment."

S77

"Comparative dollar savings in heating can be obtained when existing housing is retrofitted with a similar investment in energy conservation."

S89

"Tax energy high enough to spur concerted efforts to reduce consumption to a minimum of zero growth."

S161

"When large capital requirements are necessary funding should be levelled out over a period of years by the provision of special provincial financing over and above that which can be supported by the power rates at the time."

S40

Capital expenditures on energy "could mean massive capital inflows on the short term for both Ontario and for Canada, and this could increase the upward pressure on the levels of the Canadian dollar and decrease the competitive position of Canadian exports as a result. Ontario Hydro in its planning must look at that in terms of the wider economic implications... if we attempted to then internally finance all this future development we would in fact be tapping off capital which will be needed in future for secondary manufacturing, for housing, for other goods and services in the Canadian economy".

p.2077

V16

(Underlined codes refer either to the submission number or the volume number of transcripts made as part of the Preliminary Information Hearings.)

APPENDIX B-1

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PUBLIC INFORMATION HEARINGS

LIST OF EXHIBITS

FINANCIAL AND ECONOMIC ISSUES

Topic 4: Energy Utilization

- Exhibit 4-2 Evolution of Energy Requirements in Ontario.
#76-1
- 4-4 Memo dated January 6, 1971 from Larry Higgins
entitled "Marketing in the 70's".
- 4-9 North York Hydro Rate Schedule effective
January 1, 1976.
- 4-10 Consumers' Gas Rate Schedule effective
February, 1976.
- 4-11 Annual Home Energy Cost Comparison, Table
prepared and supplied by Ontario Hydro.

Topic 7: Socio-Economic Factors

- Exhibit 7-2 Ontario Hydro 1975 Financial Statements

Topic 15: Ministry of Industry and Tourism

- Exhibit 15-2 D.B.S. Balance of Payments Statistics
- 15-3 Pros and Cons of Exporting Power, as seen by
the Ministry of Industry and Tourism
- 15-4 Manpower Study, tabled by W.A. Ledingham
- 15-5 Graph entitled "Ontario Hydro Electric Demand",
a supplement to figure 7-1
- 15-6 Letter from R.B. Taylor to D.C. MacDonald
and attachments
- 15-7 Pilot Report relating employment in the service
industry to employment in manufacturing (referred
to on 2-3)

Topic 18: Ministry of Treasury, Economics, and
Intergovernmental Affairs

- Exhibit 18-1 Growth in Ontario's Demand for Electric Energy
- 18-2 A Long Term Projection of Ontario's Industrial
Development Pattern
- 18-3 Long Term Outlook for Labour Force Growth:
Canada and Ontario
- 18-4 Long Term Economic Outlook for Ontario
- 18-5 Studies on the Costs of Power Interruptions

Topic 23: System Inter-Connections

- Exhibit 23-10 Review of Consultants Report on the Social
Effects of Atmospheric Emissions from Fossil-
Fired Thermal Stations, Report 75-75-K, prepared
by P.J. Youston, Mathematician, Ontario Hydro,
Operations Research Group.

Topic 28: Atomic Energy of Canada Ltd.

- Exhibit 28-9 Pamphlet entitled Technology Transfer by E.C.W.
Perryman dated April 1974

Topic 31: Toronto-Dominion Bank

- Exhibit 31-1 Pamphlet entitled Canadian Financial Outlook and
the Availability of Capital issued by the
Toronto-Dominion Bank

Topic 38: Energy Probe

- Exhibit 38-1 Document entitled Investment Planning in the Energy
Sector, by Kahn, Davidson, Makhijani, Caesar and
Berman, dated March 1, 1976
- 38-2 Document entitled The Renewable Energy Handbook
- 38-3 Paper entitled Projecting an Energy Efficient
California by Goldstein and Rosenfeldt
- 38-4 Document entitled Conservation and Peak Power -
Cost and Demand, by Goldstein and Rosenfeldt,
dated December 8, 1975
- 38-5 Booklet reprint from Foreign Affairs entitled Energy
Strategy: The Road Not Taken?, by Amory B. Lovins

Topic 53: Science Council of Canada

Exhibit 53-2 Science Council of Canada, Report #23, dated
March 1975 entitled Canada's Energy Opportunities

53-3 Science Council of Canada, Report #25, dated
July 1976 entitled Population, Technology and
Resources.

APPENDIX C

RESEARCH AND BACKGROUND PAPERS DEVELOPED BY THE COMMISSION

A Study of Awareness, Attitudes and Future Expectations of Ontario Residents Regarding the Supply and Use of Electrical Energy	Semper Paratus Ltd.
The Role of Ontario Hydro as an Economic Development Tool of the Province	J.O. Dean
A Preliminary Study of the Conceptual and Institutional Structure of Energy Policy Making in Ontario and its Policy Alternatives	Dr. C.A. Hooker
The Socio-Economic Significance of Electric Power Planning	Dr. C.A. Hooker (Ivey Paper)
A Methodology for Comparing Total Costs of Alternate Technologies in Electrical Supply	Dr. Philip Hill
An Impact Survey of Communities Adjacent to Recent Ontario Hydro Developments	Dr. E. Pickett (Experience '76 Project)
Ontario Hydro's Planning Concepts	K. Slater
Report on Electrical Load Management Possibilities	Leighton and Kidd Ltd.

RESEARCH PAPERS FUNDED BY THE COMMISSION

Food Land Steering Committee

Research includes:

- impact of Hydro on Ontario economy, food production, industrial growth

M.P. Sudbury

Research includes:

- Sudbury as an energy centre

Energy Probe

Research includes:

- the economic, environmental and social implications of Ontario Hydro's proposed generating program as compared to alternative strategies for Ontario's energy future.

Sierra Club

Research includes:

- analysis of Ontario Hydro's studies of reserve margins, reliability, generation plan, load management and pricing policy.

Conservation Council of Ontario

Research includes:

- areas of conservation and pollution, use of waste heat from generating stations
- alternative sources of generation, merits of the use of more and less gas and oil as fuels, potential of solid waste as fuel
- pricing, improvements in building codes, land use, etc.

Department of Geography, University of Waterloo

Research includes:

- the long-term socio-economic impact of an electrical power transmission corridor on the rural environment

Whitefish River Indian Reserve

Research includes:

- environmental, historical and economic impact of a proposed nuclear generating station on La Cloche Island.

APPENDIX D

SELECTED EXAMPLES OF RECOMMENDATIONS AND OPINIONS

OF REVIEW AGENCIES

ON FINANCIAL AND ECONOMIC FACTORS

I. TASK FORCE HYDRO RECOMMENDATIONS

Hydro's Role

- 1.3 Hydro be directed through the Provincial Secretary for Resources Development:
 - (a) to meet demand for electricity in Ontario at the lowest feasible cost
 - (b) to maintain those standards of reliability which are agreed upon from time to time by the Government and Hydro.
- 1.5 As a general rule, the additional costs incurred for environmental concerns be included in electricity prices.
- 1.7 Hydro's marketing policy be designed specifically to support Provincial energy and environmental policy and, within the limits thereby imposed, to ensure the most efficient use of capital facilities.
- 1.9 In the event that Hydro should be required to support regional development or contra-cyclical construction policies, the additional costs of so doing should not be built into power prices but should be borne by subsidy from the Provincial Treasury.

Financial Objectives for Hydro

- 4.1 The mix of internal and external funds be established with the objectives of minimizing the cost of capital over the long term.
- 4.2 Hydro take whatever steps are necessary to prevent any further increase in its debt/equity ratio.
- 4.3 Hydro take the initiative with Government in undertaking a periodic review of Hydro's financial performance, using rate of return on net assets as a principal criterion.
- 4.4 Surplus funds be retained by Hydro to be used at its discretion for debt retirement, rate stabilization, system expansion and to provide for contingencies.

Hydro Securities Issues

- 4.9 The provincial guarantee of Hydro's securities be retained.
- 4.12 In addition to developing the Canadian market for its securities, Hydro continue to develop markets in the U.S. and other foreign countries.

Principles of Ratemaking

- 4.18 Ontario Hydro adopt a pricing policy that will more accurately reflect the supply cost of electricity, and that will give effect to government policies for the allocation of capital within the energy sector.
- 4.19 Ontario Hydro's research programs aimed at developing a uniform costing philosophy based on marginal costing be expanded to embrace studies of the feasibility and acceptability of:
- (a) bulk power and retail rates that vary with the time of day and season of year,
 - (b) demand charges that are based on a customer's load at the time of the monthly or seasonal system peak rather than on his individual monthly peak.
- 4.26 Hydro extend every effort to reduce its reserve margin through the promotion of interruptible power contracts.

Rate Review and Appeal Procedures

- 4.27 There be established an Electricity Rate Review Board, appointed by the Lieutenant-Governor in Council, to publicly hear appeals and review proposals for changes in wholesale and direct industrial rates and to review the principles underlying the establishment of retail rates across the Province.

II. TASK FORCE HYDRO IMPLEMENTATION

- 1) Establishment of the Ministry of Energy in 1973.
- 2) The Minister of Energy required (by Section 37a of the Ontario Energy Board Act) to refer any bulk power rate changes proposed after January, 1975, to the Ontario Energy Board for public hearings and a report. The Minister may also refer to the Board
 - (a) any existing or proposed rates or charges of Ontario Hydro
 - (b) any matter related to or affecting rates and charges, including principles and practices respecting power costing, ratemaking, financing, system expansion and operations.

3. Since 1975 the following reviews have been undertaken by the Ontario Energy Board:
 - (a) System, Expansion Program (1977-1983) and Financial Policies
 - (b) Bulk Power Rates for 1975, 1976 and 1977.
4. A major Costing and Pricing Study was undertaken by Ontario Hydro and referred to the Ontario Energy Board by the Minister of Energy in February, 1977.

III. THE ONTARIO ENERGY BOARD

Report to the Minister of Energy: Ontario Hydro Power System Expansion Program and Financial Policies August 1974.

The Opinion of the Board

- Pg. 213 "The expansion of the Ontario Hydro power system will be attended by problems of a technical, environmental and financial nature that are only beginning to be fully appreciated by the public. The era of low-cost hydro-electric power generation in Ontario is over and growth in generating capacity must be in the form of fossil-fired and nuclear plants, which are relatively expensive to build and operate..."
- Pg. 214 "The high capital cost of the kinds of plant and other facilities required for Hydro's system expansion will create unprecedented demands for capital funds. Since its capital funds are obtained either directly or indirectly on the credit of the Province, due consideration must be given to the possible effect of Hydro's borrowings on the ability of the Province to obtain, on reasonable terms, the funds it requires for other purposes. The high capital costs of new plant, coupled with increased operating costs will also probably result in double-digit annual increases in the cost of electricity."
- Pg. 215 "Few voices can be heard to say that it was not in the public interest to use the provincial credit to develop the hydro-electric resources of the Province. However, it does not follow that the Province should subsidize expansion of Ontario Hydro's power system in the form of fossil-fired and nuclear generating stations and the necessary transmission lines and transformer stations...Hydro's customers...must be prepared to bear the cost of future expansion to the extent necessary to prevent impairment of the credit of the Province."
- Pg. 215 "In the light of the increasing costs of electricity, Hydro must become more cost-conscious than it has had to be in the past. In particular, the matter of inter-utility productivity comparisons, the amount of reserve capacity needed and the quality of service that will be accepted by customers must be reviewed by Hydro."

- Pg. "Export sales of secondary energy, especially nuclear-generated
216 energy, as a means of reducing costs to Ontario customers,
should be the subject of a thorough and continuing review by
Hydro."
- Pg. "Hydro should take the initiative in promoting reasonable
216 measures for the dampening of demand for electricity..."
- Pg. "The financial policies of Hydro should continue to be aimed
220-1 at fairly assigning costs as between present and future
customers but must be established on a basis that ensures that
they give adequate weight to the need for protection of the
provincial credit and to the economic consequences of the
possible under-pricing of electricity.... The growth of the
equity must be adequately provided for by policies that will
assure investors of the maintenance of the credit of the
Province notwithstanding the huge demands for capital for
Ontario Hydro for power system expansion...the Board assumes
that the provincial credit will continue to be used for the
development of Hydro..."
- Pg. "...the financial objectives, as stated by Hydro, must be
221- treated as generalities subject to interpretation.... The term
223 "lowest feasible cost", which appears in the statement of the
first objective, originated in a Task Force Hydro report, where
it was intended to include environmental, social and financial
charges not always properly reflected in earlier notions of
power at "lowest possible cost". It seems clear from Ontario
Hydro's interpretation that the term is not intended by Hydro
to include environmental and social costs that do not require
expenditures by Hydro. The third financial objective, finan-
cial independence, would be better stated in the language used
by Task Force Hydro, namely, to strive to remain at arm's
length from Government in matters of financial policy to the
degree that this is possible having regard for such matters as
the Provincial guarantee of its debt and the necessity to comply
with the Provincial fiscal policy."
- Pg. "Hydro is not alone in having to cope with the problems of
223 inflation. But because of lead times required for construction
of generating stations and other facilities, it must estimate
capital costs as much as seven years in advance. Also it must,
because of its methods of establishing rates, estimate
operating costs nearly two years in advance.... The Chief
Economist, who is responsible for these cost escalation fore-
casts, should play a larger role in the Hydro organization,
including the areas of system planning and rate making."
- Pg. "Hydro is in need of an adequate financial return.... The
224 criteria should be settled no less firmly than by a formal
policy decision of the Hydro Board..."

Pg. "Hydro's estimates of its borrowing requirements appear to the
225 Board to be, on the whole, reasonable and to provide a reliable
basis for planning future financing. However, reductions of
the amounts, especially in future years, are possible if
planned reserve generating capacity is reduced, as recommended
by the Board."

Pg. "On the whole, Hydro's financing objectives appear to be sound.
226 With the Provincial guarantee, it seems reasonable to think
that the required funds will be available in the Canadian, U.S.
and other foreign markets on some terms. There are recent
indications that funds may become available in a new market,
the Mid-East. However, Hydro's requirements are so large that
the following matters have to be carefully considered:

- (i) the need to maintain confidence in Hydro as a self-sustaining enterprise in order to prevent impairment of the Provincial credit
- (ii) the possibility that the Government of Ontario may require a larger proportion of the combined Government/Hydro share of the market than has been forecast
- (iii) the weakness of the evidence as to the availability of funds in the short-term and U.S. private placement markets
- (iv) the need for very close co-operation with the Ministry of Treasury, Economics and Intergovernmental Affairs in issuing and managing debt and, in the light of the large amount of U.S. and other foreign borrowings, for close attention to developments in the area of foreign exchange and balance of payments."

Response by Ontario Hydro to the 1974 reports of the Ontario Energy Board (Letter of Sept.26, 1974 from Mr. Gathercole, Chairman of Ontario Hydro, to the Hon. Darcy McKeough, Minister of Energy).

"...in welcoming the OEB's views, the Ontario Hydro Board must nevertheless retain responsibility for the ultimate decisions on those vital matters concerning the financial health and reliability of our publicly-owned power system. With these points in mind, the Hydro Board has accepted a majority of the OEB recommendations that pertain to the setting of 1975 rates. In other areas it intends to undertake a number of studies, many of which were suggested by the OEB, in an attempt to arrive at more definitive conclusions."

".... The Hydro Board has authorized eight studies into areas on which the OEB commented.

1. Productivity comparisons with utilities in other jurisdictions;
2. alternative cost allocation systems and the likely impact of proposed price increases on demand for power;
3. export policy and the manner in which sale prices are determined;
4. study of the value to the customer of the various levels of service and the effect of different service standards upon system economics;
5. overall depreciation policies and practices, particularly the adequacy of asset lives and allowances for salvage;
6. method of allocating radial transmission and specific facility charges;
7. energy rate study, and
8. interruptible rate study."

IV. ONTARIO ENERGY BOARD

Report to the Minister of Energy: Ontario Hydro Bulk Power Rates for 1976.

Part I (Oct. 1975)

The Opinion of the Board

Pg. "The Board continues to hold the view expressed in its 1974
66 report on Ontario Hydro's bulk power rates that Ontario Hydro is constantly endeavouring to establish rates for all of its customers that are fair to each customer and class of customer, and that, at the same time, reflect the cost of serving each customer and each class of customer."

SECONDARY SALES

Pg. "The Board recommends that Ontario Hydro continue to pursue
67 vigorously the export sale of capacity and energy, employing the same basic marketing approach as it has in the past.... While the Board is not in a position at this time to offer a firm opinion on the appropriate magnitude of the charge to be included in the price of export capacity and energy to recover social costs, it is of the opinion that this issue should be the subject of continued study and investigation."

FINANCIAL ASSUMPTIONS

- Pg. "...while the Board accepts that Ontario Hydro's experiences
68 in the European securities markets have not all been favourable,
it considers that the corporation's performance has been no
worse than other major borrowers and that it will need to
continue to develop these markets."

FINANCIAL FORECAST AND POLICIES

- Pg. "The Board is concerned with the deteriorating trend in the
71 debt/equity ratio and is of the opinion that Ontario Hydro
must generate more revenues for capital expenditures from rates.
The Board is convinced that, not to do so, in the face of the
continuing deterioration in the measures of financial perfor-
mance on which investors rely, could impact adversely on the
financial integrity of the corporation and ultimately on that
of its guarantor, the Province.... Ontario Hydro must take
into consideration in its planning both the availability of
market funds and the ability of its customers to bear rate
increases. The Board reiterates that the only way to minimize
in future years both rate increases and capital borrowings is
to curtail the expansion of the system.

The Board believes that as the Province and Ontario Hydro are
seen as essentially one credit in the market, they should co-
ordinate their borrowings requirements and establish priorities
for those requirements in the event they cannot all be met."

1976 BULK POWER RATES PROPOSAL

- Pg. "The Board is acutely aware of the concerns expressed by the
74 many intervenors regarding the adverse impact of the proposed
rate increases on the provincial economy and on the economic
and social well-being of all electricity consumers and
particularly on the average residential consumer. However, in
the opinion of the Board, the merits of the increase in bulk
power rates requested by Ontario Hydro for 1976 must be considered
in the light of Ontario Hydro's prime responsibility for providing
electrical service to its customers in accordance with its com-
mercial mandate and in conformity to technical standards generally
adopted by the electric power industry in North America. The
Board does not consider that Ontario Hydro, of its own volition,
should develop and implement policies intended to better the
economic and social well-being of the Province. Such policies
must be considered by government and if, in the view of govern-
ment, Ontario Hydro is able to serve as an instrument in their
implementation, then Ontario Hydro should be so instructed."

Part II (Feb. 1976)

(Numbers in parentheses refer to Hydro
Response following)

SECONDARY ENERGY - SALES AND REVENUE

- Pg. "If additional classes of interruptible service would enhance
40 the opportunities to make profitable export sales, the Board is
of the view that they should be made available to industry." (1)

SYSTEM EXPANSION PROGRAM

Pg. "The traditional approach to power system planning is no
48 longer appropriate in North America." (2)

Pg. "Clearly, if the objective is to lower capital spending, the
51 preferred approach is not the imposition of arbitrary limits
but rather to develop incentives, through rate policies or
otherwise, which will cause a reduction in the growth of
electrical demand, especially at the time of peak." (3)

Pg. "The general public...expects Ontario Hydro to exhibit positive
51 leadership, wherever its expertise and resources give it
particular advantages, in resolving the very serious problems
notably of capital requirements associated with the exponential
growth of demand for electric power." (2)

Pg. "...as the Board has said that the load forecast is likely to
53 prove, if anything, too high, it strongly urges Ontario Hydro
to consider taking immediate steps to reduce its generating
reserve margins." (2)

FINANCIAL ASSUMPTIONS

Pg. "The Board is concerned...with the methodology of the escalation
60 forecasting process.... The Board is concerned with the apparent
informality with which the escalation forecast is prepared."

Pg. "The Board is also concerned that under "Other Sources" there
61 is no mention of any contact with the staff of the Office of
Economic Policy in the Ministry of Treasury, Economics and
Intergovernmental Affairs." (4)

CAPITAL EXPENDITURE FORECAST

Pg. "The Board cannot help but wonder if the Ontario consumer of
67 electricity is not bearing more than an equitable share of the
costs and risks associated not only with the heavy water program
but also with the overall Canadian nuclear power program. This
is not to imply a criticism of the nuclear power program at the
national level but rather to observe that the Ontario consumer
appears to be carrying a somewhat disproportionate burden." (5)

Pg. "Hydro is engaged in the heavy water program - the cost of
67 which is not known with any precision but which has already
proven to be far greater than originally expected with the
final costs to completion still rising. This, it claims lends
support to the criticisms of some--and shared to some extent
by the Board--that once a program is committed, it proceeds
regardless of cost." (6)

Pg. "...the combined effects of double digit inflation and the
69 trend towards an increasing proportion of highly capital
intensive nuclear generation...caused counsel for the inter-
venors and the Board to express their strong concerns regarding
forecasts of growth that showed a continued doubling of the

Ontario Hydro system every decade. ...the central theme was essentially the same, are the electricity consumers of Ontario able to bear the costs associated with the system expansion program that Ontario Hydro deems necessary to supply the electrical demand of the Province with the accepted standard of reliability? The Board thinks not, at least on a continuing basis, and, ...believes that the system expansion program should be reviewed." (2)

FINANCIAL POLICIES

Pg. "None of the alternatives (to the current methods of financing
77 Ontario Hydro) proposed appears to have much practical merit. The Board does not consider that equity capital raised through the mechanism of preferred share offerings will provide Ontario Hydro with less costly funds."

Pg. "The (equity) study might well have benefitted from greater
84 consideration of the economic factors.... The Board hoped that an Ontario Hydro or governmental study would establish a more precise level compatible with the economic and financial objectives of both Ontario Hydro and the Government." (7)

DEPRECIATION

Pg. "Whereas the Board accepts Ontario Hydro's philosophy of
91 original cost depreciation, it hopes that the study in progress on replacement cost accounting will recognize the cash flow problem." (8)

Pg. "The Board considers that Ontario Hydro's methods of accounting
93 for the costs of the heavy water program may have the effect of deferring an undue proportion of the cost and risk of the program to future generations of customers.... (9)

Even though...Ontario Hydro has, to date, been unsuccessful in involving the private sector in an equity role in its heavy water program, the Board hopes that the foregoing considerations would induce Ontario Hydro and the Provincial Government to renew their efforts in this direction." (10)

EFFECTIVENESS OF THE HEARING

Pg. "The Board sees no merit in assuming regulatory authority over
177 Ontario Hydro."

Pg. "The Board is recommending a series of public hearings by itself
179 and any appropriate inquiries by other agencies, which will examine, among other matters, the efficiency and productivity of the organization, the validity of medium-term system expansion plans in terms of realistically required reserves and economic investment choices; the financial policy in general and pricing policy in particular; the economic and social role Ontario Hydro does and should play in the Province; and the environmental impact and social costs of Ontario Hydro." (11)

Ontario Hydro Response (Letter of June 24, 1976 from Mr. R.B. Taylor, Chairman of Ontario Hydro to the Honourable Dennis R. Timbrell, Minister of Energy)

1. "These considerations are to be included in the Costing and Pricing Study."
2. "Several issues have been overtaken by events. The traditional North American approach to power system planning, which the OEB stated was no longer appropriate, has changed in Ontario. Capital available for new construction has replaced forecasts of customers' requirements as the starting point in the planning process and in February we informed you that the Hydro Board had authorized a revised program affecting 11 major projects and reducing capital expenditures by \$5.2 billion through to 1985. The long-term effect will be to reduce reserve margins and reliability of supply to customers unless future growth in power demands is below the historic long-term trend line and the 1975 load forecast. As a result, conservation to reduce consumption has become the central issue facing Ontario Hydro and the municipal utility systems.... Reserves will be reduced as a consequence of the latest cuts in the capital program, which took place after the OEB submitted its report. The Hydro Board believes it would be imprudent to cut planned reserves any deeper, at least before the current study undertaken at the OEB's request on reserves and system reliability is completed."
3. "Agreed, but in view of the present circumstances, the reduction of capital expenditures has been the approach taken. It will nevertheless be necessary to develop incentives through rate policies and other means which will reduce electrical demand."
4. "Our approach was consciously developed in an attempt to ensure that our perspective remains broad...informality in the system exists only in the data acquisition stage. Insofar as the actual preparation of the forecast is concerned, a formal, predetermined approach is followed.... Informal preliminary contacts regarding economic assumptions and forecast figures were made during 1975 with the Office of Economic Policy. We agree that this group could be a valuable source and have begun to develop a more formal relationship."
5. "A response to this general observation is difficult without knowing the OEB's concerns in detail. It might be observed, however, that Ontario consumers to date are the principal beneficiaries of electricity produced by the Canadian nuclear power program. Federal financial help in heavy water manufacture or nuclear reactor construction would, of course, be welcome at any time."
6. "All capital projects undertaken by Ontario Hydro must be economically justified prior to commitment and approval of funds. This justification is based on the best information

available.... Economic considerations, namely minimization of the project's capital cost and its availability for revenue production as early as possible, dictate that the project schedule be kept tight.... There is a point where in spite of economic changes, there is little choice but to complete the work at the lowest possible cost."

7. "We agree that further consideration should be given to the economic factors... As an extension to the study Hydro is assessing the means of incorporating economic factors. A study of the "cost of capital" approach to assessing the level of equity financing is currently underway."
8. "This matter is being considered in a report on inflation accounting which is now being prepared."
9. "While the economic lives of heavy water plants and nuclear plants are difficult to determine accurately, depreciation charges are calculated on the best estimates available. The estimated lives will be reviewed and whenever a change is detected the depreciation rate will be adjusted accordingly."
10. "Efforts to date have been unsuccessful, but Ontario Hydro is interested in proposals of this nature."
11. "You have not accepted the OEB's suggestions for a fresh series of hearings into various aspects of Hydro's policies and operations. The Hydro Board endorses your view that more public hearings are not required. The OEB already provides a useful public forum for discussions of these matters and last year the Royal Commission on Electric Power Planning began hearings. The Select Committee of the Legislature on 1976 rates has also probed many areas of Hydro's operations. A new and separate round of public hearings would, it seems to us, serve no useful purpose and the extra time and effort required of Hydro staff who already are heavily involved in various public participation processes would certainly detract from the Corporation's overall productivity."

V. REPORT OF THE SELECT COMMITTEE ON ONTARIO HYDRO
TO THE LEGISLATURE, JUNE 1976

Recommendations of the Committee

- III-4 The Ontario Government make financial incentives generally available to encourage the installation of energy saving equipment in homes throughout Ontario.
- III-9 The Ontario Government make financial incentives generally available to encourage investment in energy conservation-related equipment in the commercial sector.

APPENDIX D con't

- III-11 The Ontario Government set up a revolving capital pool for industry which would be available for energy saving projects.
- III-12 The Ontario Government take the lead in increasing industrial electricity generation.
- III-13 The Ontario Government ensure that the overall level of electric rates should not be increased solely for conservation purposes.
- III-15 Ontario Hydro consider the design of its rates to be an important tool in furthering reasonable load management objectives.
- III-16 Ontario Hydro and the municipal utilities actively promote the sale of interruptible power to industry and ensure that the pricing of interruptible contracts reflects the real saving to Ontario Hydro.
- IV-1 The Ontario Government ensure that Hydro's bulk power rate increases comply with the general intent of the anti-inflation program.
- IV-2 The Ontario Government ensure that the maximum permissible increase within the intent of the anti-inflation program not serve as the only constraint on future bulk power rate increases.

Response by the Government (November, 1976)

- III-4 Accepted. The principle of tax and other financial incentives to encourage the installation of energy saving equipment in homes throughout Ontario is accepted. The Minister of Energy in conjunction with the Minister of Treasury, Economics and Intergovernmental Affairs, will make recommendations in this area for further consideration by Cabinet.
- III-9 Accepted.
- III-11 Accepted in modified form...further study will be initiated as to the financial implications to Government and whether a capital pool is the best technique to encourage energy conservation by industry.

